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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/568,390	10/13/2006	Laurent Labrousse	285948US0PCT	1129

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EXAMINER	
XU, LING X	

ART UNIT	PAPER NUMBER
1784	

NOTIFICATION DATE	DELIVERY MODE
05/03/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/568,390	LABROUSSE ET AL.	
	Examiner	Art Unit	
	Ling Xu	1784	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 March 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,3,5-16 and 18-25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3,5-16 and 18-25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application.
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 3 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the barrier layer based on zirconium or the lower barrier layer based on nickel-chromium titanium, or niobium to be situated beneath the functional silver layer, does not reasonably provide enablement for the barrier layer based on zirconium and the lower barrier layer based on nickel-chromium titanium, or niobium to be situated beneath the functional silver layer. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims.

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 3, 10, and 25 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 3, it is unclear if the claim should depend on claim 1 instead of claim 2.

In claim 10, there is lack of antecedent basis for the limitation of "at least" one Zr-based barrier layer in the claim.

In claim 25, it is unclear if the ZnO-based layer is in contact with the upper barrier layer based on nickel-chromium, titanium, or niobium instead of the functional silver layer.

Claim Rejections - 35 USC § 102

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 5-6, 8-11, and 18-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Arbab et al. (US 5,942,338).

Regarding claims 1-2, 5, 10-11, and 22, Arbab discloses a multilayer high transmittance, a low emissivity coated article comprising a transparent glass substrate having deposited thereon in turn an antireflective base layer such as zinc oxide, a metallic reflective layer such as silver (col. 6, lines 50-60), a primer layer such as zirconium (col. 7, lines 45-60), a MDE layer comprising zinc oxide, and a protective overcoat oxide layer (col. 9, lines 5-20). Arbab also discloses that the primer layer is acts as a sacrificial layer to protect the metallic reflective layer from oxidation (col. 7, lines 45-60).

Regarding claims 6 and 8, the thickness of the primer layer is about 0.8-1.2 or 2-3 nm (col. 8, lines 1-20). The thickness of the MDE layer is 20-50 nm (col. 4, lines 1-10).

Regarding claims 9 and 18-21, as stated above, since Arbab discloses the coated article comprising the same layered structure as claimed, the same coated article would also have the same properties such as substantially retaining its properties, after a heat treatment at a temperature of at least 500°C.

Claim Rejections - 35 USC § 103

4. Claims 3, 7, and 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbarb et al., as applied to claims 1 and 11 above, and further in view of Coustet et al. (W0-2002/048065, its US equivalent, US 2005/0123772, is used as English translation).

As stated above, Arbarb discloses the same coated substrate as recited in claims 1 and 11.

Regarding claims 3 and 7, Arbarb does not disclose the coated substrate comprising the lower barrier layer as recited in claim 3 and the thickness of the silver layer as recited in claim 7.

Coustet teaches that the thickness of the silver layer can be 9.5-17.5 nm (see table on page 3). Coustet also teaches that a thin layer of metal may be inserted between functional layer and the coating placed beneath it and acts as a tie layer (which protect the functional layer, for example, from oxidation). The coating can be titanium, niobium, or nickel-chromium alloy layers (page 2, [0027).

Therefore, it would have been obvious to one of ordinary skill in the art to have a metal layer placed beneath the functional layer in order to protect the functional layer.

Regarding claim 13, Arbarb does not disclose the coated substrate comprising the lower dielectric layer as recited in claim 13.

Coustet teaches a lower dielectric layer structure of Si_3N_4/ZnO (page 2, [0029]) for a coated glass substrate. Coustet teaches that it is beneficial for the coatings to comprise both metal oxide layers such as ZnO layer for stabilizing the silver layer and silicon nitride layers for oxygen barrier (page 2, [0023]). The coated article comprising such layered structure is able to undergo a heat treatment of the bending or toughening type without any substantial optical change (page 1, [0005]).

Therefore, it would have been obvious to one of ordinary skill in the art to use the low dielectric layer structure as claimed for Arbab's anti-reflection dielectric layer in order to stabilize the silver layer, provide oxygen barrier, and to maintain the optical properties of the coated glass substrate even after a heat treatment, bending or toughening.

Regarding claims 14-16, Arbab discloses the coated glass is useful for architectural glazing and as vehicle windows to provide high light transmitting and low emissivity to the architecture or vehicle (cols 1-2).

Arbab does not disclose the specific layered structure of the double glazing as recited in claims 14-16.

However, it is well known in the art that the architectural or vehicle windows comprising multiple or double glazing structure. For example, Coustet teaches a multiple or double glazing comprising an inert film between the two glass substrates (page 2, [0030]) and at least one of the glass substrate coated with a low emissivity coating that comprising silver.

Therefore, it would have been obvious to one of ordinary skill in the art to provide Arbab's coated glass substrate in a double glazing structure as claimed in order to make the coated glass substrate suitable for architectural or vehicle windows.

Claim Rejections - 35 USC § 103

5. Claims 1 3, 5-11, 13-16, 18-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Arbab et al. in view of Coustet et al.

Regarding claims 1, 5, 10-11, 14-16, and 22-25, Arbab discloses a multilayer high transmittance, a low emissivity coated article comprising a transparent glass substrate having deposited thereon in turn an antireflective base layer such as zinc oxide, a metallic reflective layer such as silver (col. 6, lines 50-60), a primer layer such as zirconium (col. 7, lines 45-60), a MDE layer comprising zinc oxide, and a protective overcoat oxide layer (col. 9, lines 5-20). Arbab also discloses that the primer layer is acts as a sacrificial layer to protect the metallic reflective layer from oxidation (col. 7, lines 45-60).

Arbab does not disclose the barrier laver based on zirconium is situated beneath and in contact with the functional silver laver.

However, Arbab discloses that the coated article can be used in architectural glazing or glazing for vehicles (col. 5, lines 45-55). It is well known in the art that the architectural or vehicle windows comprising multiple or double glazing structure. For example, Coustet teaches a multiple or double glazing comprising two glass substrates (page 2, [0030]) and at least one of the glass substrate coated with a low emissivity coating that comprising silver.

It would have been obvious to one of ordinary skill in the art to provide Arbab's coated glass substrate in a double glazing structure as claimed in order to make the coated glass substrate suitable for architectural or vehicle windows.

It should be noted that, in a double glazing structure comprising two substrates, the Zr layer in the double glazing can be viewed as "above" the functional layer from the first substrate and "beneath" the functional layers from the second substrate. Accordingly, the location of the Zr layer can be viewed as either "above" or "beneath" the functional layers depending on the location of the specific substrate in a double glazing structure.

Regarding claims 3 and 7, Arbarb does not disclose the coated substrate comprising the lower barrier layer as recited in claim 3 and the thickness of the silver layer as recited in claim 7.

Coustet teaches that the thickness of the silver layer can be 9.5-17.5 nm (see table on page 3). Coustet also teaches that a thin layer of metal may be inserted between functional layer and the coating placed beneath it and acts as a tie layer (which protect the functional layer, for example, from oxidation). The coating can be titanium, niobium, or nickel-chromium alloy layers (page 2, [0027).

Therefore, it would have been obvious to one of ordinary skill in the art to use the low dielectric layer structure as claimed for Arbab's anti-reflection dielectric layer in order to stabilize the silver layer, provide oxygen barrier, and to maintain the optical properties of the coated glass substrate even after a heat treatment, bending or toughening.

Regarding claims 6 and 8, Arbarb discloses that the thickness of the primer layer is about 0.8-1.2 or 2-3 nm (col. 8, lines 1-20). The thickness of the MDE layer is 20-50 nm (col. 4, lines 1-10).

Regarding claims 9 and 18-21, as stated above, since Arbab discloses the coated article comprising the same layered structure as claimed, the same coated article would also have the same properties such as substantially retaining its properties, after a heat treatment at a temperature of at least 500°C.

Regarding claim 13, Arbarb does not disclose the coated substrate comprising the lower dielectric layer as recited in claim 13.

Coustet teaches a lower dielectric layer structure of Si_3N_4/ZnO (page 2, [0029]) for a coated glass substrate. Coustet teaches that it is beneficial for the coatings to comprise both metal oxide layers such as ZnO layer for stabilizing the silver layer and silicon nitride layers for oxygen barrier (page 2, [0023]). The coated article comprising such layered structure is able to undergo a heat treatment of the bending or toughening type without any substantial optical change (page 1, [0005]).

Therefore, it would have been obvious to one of ordinary skill in the art to use the low dielectric layer structure as claimed for Arbab's anti-reflection

dielectric layer in order to stabilize the silver layer, provide oxygen barrier, and to maintain the optical properties of the coated glass substrate even after a heat treatment, bending or toughening.

Allowable Subject Matter

6. Claim 12 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

7. Applicant's arguments filed on 7/21/2009 with respect to reference Arbab et al. have been considered but they are not persuasive.

Applicant argues that Arbab does not teach that the barrier lager based on zirconium is situated above and in contact with the functional silver layer.

As stated above, Arbab discloses a multilayer high transmittance, a low emissivity coated article comprising a transparent glass substrate having deposited thereon in turn an antireflective base layer such as zinc oxide, a metallic reflective layer such as silver (col. 6, lines 50-60), a primer layer such as zirconium (col. 7, lines 45-60), a MDE layer comprising zinc oxide, and a protective overcoat oxide layer (col. 9, lines 5-20). Accordingly, Arbab clearly teaches that the primer layer comprising zirconium is situated above and in contact with the functional silver layer. Arbab also discloses that the primer layer is acts as a sacrificial layer to protect the metallic reflective layer from oxidation

(col. 7, lines 45-60), which is another clear indication that the primer layer is in contact with the metal silver layer.

Applicant's other arguments have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling Xu whose telephone number is 571-272-7414. The examiner can normally be reached on 8:00 am- 4:30 pm, Monday - Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer McNeil can be reached on 571-272-1540. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ling Xu
Primary Examiner
Art Unit 1784

/Ling Xu/
Primary Examiner, Art Unit 1784
April 26, 2010